

RN98170

Serial No: 09/856,808

Amendment After Final

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-13. (Canceled)

14. (Currently amended) Single-component organopolysiloxane compositions which are stable on storage in the absence of moisture and which crosslink to translucent and adherent elastomers in the presence of moisture, made in a single closed reactor with stirring, by the process, batchwise or continuous, comprising the successive following steps 1 to 3:

C³

- step 1: functionalization by reacting a mixture of at least one reactive linear diorganopolysiloxane A comprising a hydroxyl group at each chain end, of formula (I) defined below, at least one hydroxylated organopolysiloxane resin B, as defined below, presenting in its structure at least two different units, at least one polyalkoxysilane C as defined below, optionally, at least one aliphatic C₁ to C₃ alcohol E, and, optionally, at least one nonreactive linear diorganopolysiloxane F as defined below, said functionalization being carried out in the presence of a catalytically effective amount of a ~~functionalization~~ functionalization catalyst D, provided that said catalyst is not an organic titanium derivative,

- step 2: blending or compounding by adding in any order into the reacted mixture obtained in step 1, which is kept stirred, an inorganic filler G comprising an amorphous silica in the form of a solid, an effective amount of a curing catalyst H as

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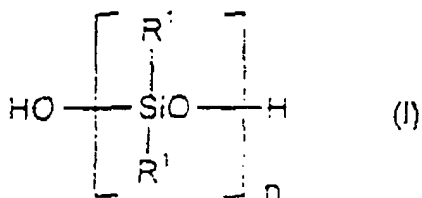
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defined below, comprising at least one organic titanium derivative, optionally, at least one nonreactive linear diorganopolysiloxane F as defined below, and ,optionally, at least one auxiliary agent I, and

- step 3: subjecting the blended or compounded mixture obtained in step 2, which is kept stirred, to a devolatilization operation carried out under a pressure below atmospheric pressure,

wherein

- the reactive linear diorganopolysiloxane A is of formula (I):



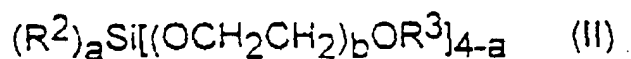
wherein:

R^1 substituents, which are identical or different, represent an aliphatic, cyclic or aromatic, saturated or unsaturated, substituted or unsubstituted, C_1 to C_{13} monovalent hydrocarbonaceous group,

n has a value sufficient to confer, on the diorganopolysiloxanes of formula (I), a dynamic viscosity at 25°C from 1 000 to 1 000 000 mPa·s,

- the hydroxylated organopolysiloxane resin B exhibits in its structure, at least two different units selected from the group consisting of the units of formulae $(\text{R}^1)_3\text{SiO}_{1/2}$ (M unit), $(\text{R}^1)_2\text{SiO}_{2/2}$ (D unit), $\text{R}^1\text{SiO}_{3/2}$ (T unit) and SiO_2 (Q unit), at least one of these units being a T or Q unit, said R^1 groups, which are identical or different, being as

defined above in formula (I) , said resin containing hydroxyl groups and having a content by weight of hydroxyl group ranging from 0.1 to 10%,
the polyalkoxysilane C is of formula (II):



wherein:

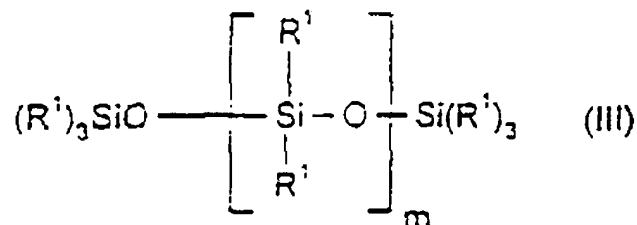
R^2 represents an aliphatic, cyclic or aromatic, saturated or unsaturated, substituted or unsubstituted, C_1 to C_{13} monovalent hydrocarbonaceous group

R^3 , which is identical or different, represents a linear or branched C_1 to C_8 alkyl group,

a is zero or 1,

b is zero or 1;

- the nonreactive linear diorganopolysiloxane F is of formula (III):



wherein:

R^1 , which is identical or different, is as defined above in formula I,

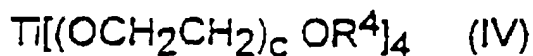
m has a value sufficient to confer, on the polymers of formula (III), a dynamic viscosity at 25°C from 10 to 200 000 mPa·s;

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- the catalyst H is selected from the group consisting of H1 monomers and H2 polymers, H1 monomers being of formula (IV)



wherein:

R^4 , which is identical or different, represents a linear or branched C_1 to C_{12} alkyl group,

c is zero, 1 or 2,

provided that when the c symbol represents zero, R^4 has from 2 to 12 carbon atoms

and, when the c symbol represents 1 or 2, R^4 has from 1 to 4 carbon atoms,

H2 polymers resulting from the partial hydrolysis of monomers of formula (IV) in

which the R^4 symbol has the above mentioned meaning with the c symbol represent zero.

15. (Previously presented) Compositions according to claim 14, comprising, for 100 parts by weight of hydroxylated linear diorganopolysiloxane(s) A:

- from 3 to 30 parts of hydroxylated resin(s) B,
- from 2 to 15 parts of polyalkoxysilane(s) C,
- a catalytically effective amount of functionalization catalyst D,
- from 0 to 2 parts of alcohol(s) E,
- from 0 to 30 parts of nonreactive linear diorganopolysiloxane(s) F,
- from 2 to 40 parts of siliceous filler G,
- from 0.3 to 5 parts of organic titanium derivative(s) H, and

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- from 0 to 20 parts of auxiliary agent(s) I.

16. (Previously presented) Compositions according to claim 14, wherein R¹ is selected from the group consisting of

- alkyl and haloalkyl groups having from 1 to 13 carbon atoms,
- cycloalkyl and halocycloalkyl groups having from 5 to 13 carbon atoms,
- alkenyl groups having from 2 to 8 carbon atoms,
- mononuclear aryl and haloaryl groups having from 6 to 13 carbon atoms, and
- cyanoalkyl groups having alkyl linkages with from 2 to 3 carbon atoms.

17. (Previously presented) Compositions according to claim 16, wherein R¹ is methyl, ethyl, propyl, isopropyl, n-hexyl, phenyl, vinyl or 3,3,3-trifluoropropyl.

18. (Previously presented) Compositions according to claim 14, wherein the hydroxylated organopolysiloxane resin B is a resin not comprising a Q unit in its structure.

19. (Previously presented) Compositions according to claim 14, wherein:

- R² is selected from the group consisting of
 - alkyl and haloalkyl groups having from 1 to 13 carbon atoms,
 - cycloalkyl and halocycloalkyl groups having from 5 to 13 carbon atoms,
 - alkenyl groups having from 2 to 8 carbon atoms,
 - mononuclear aryl and haloaryl groups having from 6 to 13 carbon atoms, and
 - cyanoalkyl radicals having alkyl linkages with from 2 to 3 carbon atoms, and
- R³ is a C₁ to C₄ alkyl group.

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20. (Previously presented) Compositions according to claim 14, wherein the polyalkoxysilane C of formula (II) is selected from the group consisting of $\text{Si}(\text{OC}_2\text{H}_5)_4$, $\text{CH}_3\text{Si}(\text{OCH}_3)_3$, $\text{CH}_3\text{Si}(\text{OC}_2\text{H}_5)_3$, $(\text{C}_2\text{H}_5\text{O})_3\text{Si}(\text{OCH}_3)$, $(\text{CH}_2=\text{CH})\text{Si}(\text{OCH}_3)_3$ and $(\text{CH}_2=\text{CH})\text{Si}(\text{OC}_2\text{H}_5)_3$.

21. (Previously presented) Compositions according to claim 14, wherein the catalyst D is a lithium hydroxide of formula LiOH or $\text{LiOH}\cdot\text{H}_2\text{O}$.

22. (Previously presented) Compositions according to claim 21, characterized in an amount of 0.005 to 0.5 mol of lithium hydroxide per 1 mol of silanol groups comprised in the hydroxylated polymer(s) A and in the hydroxylated resin(s) B.

23. (Previously presented) Compositions according to claim 14, wherein the inorganic filler G is a treated precipitated silica in a powder form, an untreated precipitated silica in a powder form, a treated fumed silica in a powder form, an untreated fumed silica in a powder form, or a mixture thereof, the BET specific surface area of the silica being greater than $40 \text{ m}^2/\text{g}$.

24. (Previously presented) Compositions according to claim 14, wherein the curing catalyst H is an organic titanium derivative including the H1 monomers of formula (IV) or the H2 polymers resulting from the partial hydrolysis of the H1 monomers, R^4 being methyl, ethyl, propyl, isopropyl, butyl, isobutyl, hexyl, 2-ethylhexyl, octyl, decyl or dodecyl.